CLAIMS

What is claimed is:

1. A method of making a device using a lithographic system having a lens from which an exposure pattern is emitted, comprising:

providing a wafer and a photo resist layer disposed over the wafer;

positioning a conforming immersion medium between the photo resist layer and the lens;

moving at least one of the wafer and the lens such that the lens and the photo resist are in intimate contact with the conforming immersion medium; and

exposing the photo resist with the exposure pattern, the exposure pattern traversing the conforming immersion medium.

2. The method of claim 1, wherein the device is an integrated circuit.

3. The method of claim 1, wherein positioning the conforming immersion medium includes coating the photo resist with the conforming immersion medium.

4. The method of claim 3, wherein the moving brings the lens into contact with an upper surface of the conforming immersion medium.

5. The method of claim 4, wherein deforming pressure is exerted on the conforming immersion medium by the lens.

6. The method of claim 4, further comprising:

repositioning the wafer, photo resist and conforming immersion medium with respect to the lens by bringing the lens out of contact with the upper surface of the conforming immersion medium, moving the wafer and bringing the lens into contact with the upper surface of the conforming immersion medium; and

exposing the repositioned photo resist with the exposure pattern, the exposure pattern traversing the conforming immersion medium.

7. The method of claim 1, wherein positioning the conforming immersion medium includes coating the lens with the conforming immersion medium.

8. The method of claim 7, wherein the moving brings the photo resist into contact with a lower surface of the conforming immersion medium.

9. The method of claim 8, wherein deforming pressure is exerted on the conforming immersion medium with the lens.

10. The method of claim 8, further comprising:

repositioning the wafer and photo resist with respect to the lens and the conforming immersion medium by bringing the photo resist out of contact with the lower surface of the conforming immersion medium, moving the wafer and bringing the lower surface of the conforming immersion medium into contact with the photo resist; and

exposing the repositioned photo resist with the exposure pattern, the exposure pattern traversing the conforming immersion medium.

11. The method of claim 7, wherein the conforming immersion medium is discarded after a predetermine number of exposures are made through the conforming immersion medium.

12. The method of claim 1, wherein an index of refraction of the conforming immersion medium is about 1.0 to about 1.5.

13. The method of claim 1, wherein the conforming immersion medium has an index of refraction selected to correspond to an index of refraction of the lens.

14. The method of claim 1, wherein the conforming immersion medium is made from a hydrogel.

15. The method of claim 1, wherein the conforming immersion medium is made from a glass.

16. The method of claim 1, wherein the conforming immersion medium is made from a gelatin.

17. The method of claim 1, wherein the conforming immersion medium is made from a silicone based material.

18. The method of claim 17, wherein the conforming immersion medium is fluoronated.

19. The method of claim 1, further comprising repositioning the wafer with respect to the lens and re-exposing the photo resist with the exposure pattern.

20. The method of claim 1, wherein, after moving, the conforming immersion medium has a thickness of about five times to about ten times an exposure wavelength of the exposure pattern.

21. A method of making a device using a lithographic system having a lens from which an exposure pattern is emitted, comprising:

providing a wafer and a photo resist layer disposed over the wafer;

bringing each of the lens and the photo resist layer into intimate contact with a conforming immersion medium, the conforming immersion medium disposed between the lens and the photo resist layer; and

exposing the photo resist with the exposure pattern, the exposure pattern traversing the conforming immersion medium.

22. A lithographic system comprising:

a lens of a lithographic imaging assembly;

a wafer having a photo resist layer disposed over the wafer; and

a conforming immersion medium disposed between the lens and the photo resist layer and intimately contacting the photo resist layer and the lens.